

## CLAIMS

1. A rotary atomizer for coating work pieces comprising a rotating bell-shaped plate shaft of a bell-shaped plate for discharging a spray stream of a coating agent, at least one steering air outlet for discharging steering air for shaping the spray stream, a bearing unit arranged in a housing of said rotary atomizer for a turbine with a turbine wheel for driving said bell-shaped plate, and at least one steering air line arranged in said housing opening into said steering air outlet for supplying steering air, wherein steering air line passes axially through said bearing unit.

2. A rotary atomizer according to Claim 1, wherein said bearing unit comprises at least one steering air inlet in its surface shell and at least one steering air outlet in its end surface facing said bell-shaped plate, said steering air inlet and said steering air outlet of said bearing unit being fluidly connected by a hole in said bearing unit.

3. A rotary atomizer according to Claim 2, said hole in the bearing unit runs at an acute angle to an axis of rotation of said bell-shaped plate.

4. A rotary atomizer according to Claim 2, wherein said hole in said bearing unit on said side facing said bell-shaped plate extends parallel to said axis of rotation and comprises a needle hole extending from said surface shell of said bearing unit.

5. A rotary atomizer according to Claim 1, wherein said steering air line runs at a radial distance from said axis of rotation of said bell-shaped plate, said distance being greater than an outer diameter of said turbine wheel and smaller than an outer diameter of said bearing unit.

6. A rotary atomizer according to Claim 1, wherein said steering air line runs essentially without bends at least over a large part of its length.

7. A rotary atomizer according to Claim 1, wherein said steering air line extends essentially parallel to said axis of rotation of said bell-shaped plate at least over a large part of its length.

8. A rotary atomizer according to Claim 1, wherein said steering air line comprises an essentially constant cross-sectional area at least over a large part of its length.

9. A rotary atomizer according to Claim 1, wherein said steering air line comprises an essentially constant cross-sectional shape at least over a large part of its length.

10. A rotary atomizer according to Claim 1, wherein said steering air line comprises an obstacle-free interior shape at least over a large part of its length.

11. A rotary atomizer according to Claim 1, comprising at least two steering air outlets for shaping the spray stream.

12. A rotary atomizer according to Claim 11, where said at least two steering air outlets are arranged at a different radial distance from said axis of rotation of said bell-shaped plate.

13. A rotary atomizer according to Claim 12, wherein said at least two steering air lines comprise separate steering air lines for guiding the steering air to different of said steering air outlets.

14. A rotary atomizer according to Claim 13, comprising a first steering air line is spatially separated from said housing and a second steering air line arranged toward contacting said housing.

15. A bearing unit for a turbine for driving a bell-shaped plate in a rotary atomizer, comprising a bell-shaped plate shaft rotatably supported by said bearing unit and a turbine wheel arranged on said bell-shaped plate shaft, wherein that a steering air line passes through said bearing unit being connectable to a steering air line of said rotary atomizer.

16. A bearing unit according to Claim 15, wherein said steering air line passes through said bearing unit in an axial direction.